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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,682	08/18/2003	Mitsuhiko Yamamoto	03481/LH	4603

1933 7590 07/18/2005

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EXAMINER	
ALEXANDER, MICHAEL P	

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 07/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/643,682	YAMAMOTO ET AL.	
	Examiner	Art Unit	
	Michael P. Alexander	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *15-23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *18 August 2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-14, drawn to a chemical treatment method, classified in class 205, subclass 640.

II. Claims 15-23, drawn to a chemical treatment apparatus, classified in class 204, subclass 194.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice electrolytic etching wherein the metal film is subject to anodic electrolysis.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Leonard Holtz on 6 July 2005 a provisional election was made with traverse to prosecute the invention of I, claim1-14. Affirmation of this election must be made by applicant in replying to this Office action. Claims 15-23 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "the halogen ion is a chloride ion" in line 2. There is insufficient antecedent basis for this limitation in the claim. Parent claims 4 and 6 have each have two treatment solutions, which both contain halogen ions.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4-9, 11-12 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Wheatley (U.S. Pat. 3,915,809).

Regarding claim 1, Wheatley discloses (col. 2 line 20 – col. 3 line 47) a chemical treatment method by which a copper/nickel/chromium multi-layer film formed on a plastic sheet that is subjected to film formation is etched into a predetermined pattern, comprising: a cathode electrolysis reduction step of performing electrolysis reduction (electrodeposition) for the metal film as a cathode by using a first acidic treatment solution containing an acid radical; and an acid dip step of dipping the metal film into a second acid treatment solution after the cathode electrolysis step.

Regarding claim 2, Wheatley discloses (col. 3 lines 20-21) that the chromium treatment solution is sulfuric acid.

Regarding claim 4, Wheatley discloses (col. 3 lines 34-38) that the second acidic treatment solution contains chloride ions.

Regarding claim 5, Wheatley discloses (col. 2 line 20 – col. 3 line 47) a chemical treatment method by which a copper/nickel/chromium multi-layer film formed on a plastic sheet that is subjected to film formation is etched into a predetermined pattern, comprising: a cathode electrolysis reduction step of performing electrolysis reduction (electrodeposition) for the metal film as a cathode by using a nickel electroplating solution containing a halogen chloride ion; and an acid dip step of dipping the metal film into a second acid treatment solution after the cathode electrolysis step.

Regarding claims 6-7, Wheatley discloses (col. 3 lines 34-38) that the acidic treatment solution contains chloride ions.

Regarding claim 8, Wheatley discloses (col. 3 lines 9-14) that the cathode electrolysis reduction step comprises dipping a portion of the metal film into a treatment solution containing a chloride ion.

Regarding claim 9, Wheatley discloses (col. 3 line 15-17) that a metal forming the metal film is chromium.

Regarding claim 11, Wheatley discloses (col. 2 line 20 – col. 3 line 47) a chemical treatment method by which a copper/nickel/chromium multi-layer film formed on a plastic sheet that is subjected to film formation is etched into a predetermined pattern, wherein the metal film is dipped in an acidic treatment solution containing a halogen ion, and electrolysis reduction is performed for the metal film as a cathode.

Regarding claim 12, Wheatley discloses (col. 3 line 15-17) that a metal forming the metal film is chromium.

Regarding claim 14, Wheatley discloses (col. 3 lines 34-38) that the acidic treatment solution contains chloride ions.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wheatley as applied to claim 1 above, and further in view of Shahin (U.S. Pat. 5,294,326).

Wheatley does not specify that the first acidic treatment solution can contain potassium chloride. However, Shahin discloses (see abstract) using a plating solution that contains potassium chloride in order to provide for improved efficiency and appearance. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to modify the chemical treatment method of Wheatley by substituting the electrolyte of Shahin in order to provide for improved efficiency and appearance as taught by Shahin.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wheatley as applied to claim 8 above, and further in view of Hidaka et al. (U.S. 5,425,822).

Wheatley does not specify forming a chromium alloy layer. However Hidaki et al. disclose (col. 5 lines 4-14) that carbon increases the wear resistance of chromium. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to modify the chemical treatment method of Wheatley by adding carbon to the chromium layer in order to increase the wear resistance as taught by Hidaki et al.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wheatley as applied to claim 1 above, and further in view of Hidaka et al. (U.S. 5,425,822).

Wheatley does not specify forming a chromium alloy layer. However Hidaki et al. disclose (col. 5 lines 4-14) that carbon increases the wear resistance of chromium. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to modify the chemical treatment method of Wheatley by adding carbon to the chromium layer in order to increase the wear resistance as taught by Hidaki et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Alexander whose telephone number is 571-272-8558. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ROY KING
SUPERVISORY PATENT EXAMINER
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mpa